

**METHOD AND APPARATUS FOR THREE DIMENSIONAL INSPECTION OF
ELECTRONIC COMPONENTS**

ABSTRACT OF THE DISCLOSURE

A three dimensional inspection system for inspecting ball array devices having a plurality of balls, where the ball array device is positioned in an optical system. An illuminator is located to illuminate at least one ball on the ball array device. A first optical element is positioned to transmit light to the sensor. A second optical element is positioned to direct light from the at least one ball to the sensor, where the sensor, the first optical element and the second optical element cooperate to obtain at least two differing views of the at least one ball, the sensor providing an output representing the at least two differing views. A processor is coupled to receive the output, where the processor processes the output by using a triangulation method to calculate a three dimensional position of the at least one ball with reference to a pre-calculated calibration plane.